

CLAIMS

1. A hand truck comprising a hand truck frame including a plurality of vertical members interconnected by a second plurality of cross members, said frame having an upper end, a lower end, a front side and a rear side, a handle at said upper end, and a forwardly extending horizontal load plate at said lower end, two or more wheels mounted for rotation to said frame, each of said wheels being individually disengageable from said frame for mounting to the frame in either a mutually parallel wheel position or a mutually in-line wheel position transverse to said parallel wheel position, such that the hand truck is convertible between forward and sideways displacement.
2. The hand truck of Claim 1 wherein each of said wheels is retained to said frame by a manually disengageable fastener such that the hand truck is so convertible without use of tools.
3. The hand truck of Claim 1 wherein each said wheel is retained to said frame by a manually releaseable Cotter pin.
4. The hand truck of Claim 1 wherein said frame has a pair of axially aligned wheel shafts for rotatably supporting said wheels in said mutually parallel position and a first plurality of axially parallel wheel shafts for rotatably supporting said wheels in said mutually in-line wheel position.
5. The hand truck of Claim 1 wherein each of said wheels has an axle hole sized for receiving any of said wheel shafts.
6. The hand truck of Claim 5 wherein each of said wheel shafts is diametrically perforated for passing a wheel retaining pin.
7. The hand truck of Claim 6 wherein said wheel retaining pin is a Cotter pin.
8. The hand truck of Claim 4 further comprising a frame width extension having a second plurality of wheel shafts more widely spaced than said first plurality of wheel shafts thereby to extend the wheelbase of the hand truck in said in-line wheel condition.

9. The hand truck of Claim 4 wherein said frame defines a vertical frame plane and said load plate lies in a horizontal plane perpendicular to said frame plane, and said first plurality of axially parallel wheel shafts are angled to said horizontal plane such that said wheels mounted on said first plurality of axially parallel wheel shafts are inclined relative to an underlying ground surface in a self-supporting standing position of said frame with said load plate resting on the ground surface, said first plurality of axially parallel wheel shafts being arranged on said frame such that said wheels mounted on first plurality of axially parallel wheel shafts are brought into a generally vertical load bearing position in a reclined load carrying condition of said frame with said load plate lifted from the ground surface.

10. The hand truck of Claim 4 wherein said frame comprises shaft support brackets, said axially aligned wheel shafts being end portions of an axle supported between and extending through said brackets, and each said axially parallel wheel shaft being affixed to one of said brackets transversely to said axle.

11. The hand truck of claim 10 wherein each said axially parallel wheel shaft is welded to a corresponding one of said brackets.

12. The hand truck of Claim 10 wherein said axle is welded to said brackets.

13. The hand truck of Claim 10 wherein said shaft support brackets are mutually parallel plates each bracket having a rear edge perpendicular to a said axially parallel wheel shaft affixed to said bracket.

14. The hand truck of Claim 10 further comprising a width extension plate having a second plurality of axially parallel wheel shafts affixed to said plate, said plate being adapted for removable attachment to said shaft support brackets.

15. The hand truck of Claim 14 wherein said plate is a substantially flat plate and said second plurality of axially parallel wheel shafts are perpendicular to said plate.

16. The hand truck of claim 14 wherein said plate has attachment brackets for fastening to said shaft support brackets.
17. The hand truck of Claim 16 wherein said attachment brackets are fastened to said shaft support brackets with screws passing through aligned holes in said brackets.
18. The hand truck of Claim 14 wherein said width extension plate is perforated with holes aligned for receiving said first plurality of wheel shafts in an installed condition of said plate on said shaft support brackets.
19. The hand truck of Claim 14 wherein said second plurality of axially parallel wheel shafts comprises three shafts including a center shaft and two end shafts equally spaced from said center shaft such that three wheels can be mounted on said three shafts in said in-line position.
20. The hand truck of Claim 19 wherein said center shaft is slightly lower than said end shafts on said plate in said installed condition such that said frame can be turned on one wheel mounted on said center shaft as a pivot wheel for said frame.
21. The hand truck of Claim 19 wherein said width extension plate is perforated with holes aligned for receiving said first plurality of wheel shafts in an installed condition of said plate on said shaft support brackets, said holes being intermediate said center shaft and each of said end shafts.
22. The hand truck of Claim 21 wherein said plate is mounted to said frame with said second plurality of shafts parallel to said first plurality of shafts.
23. The hand truck of Claim 10 wherein said shaft support brackets are affixed to said vertical members of said frame above said load plate.
24. The hand truck of Claim 1 further comprising a leg spring loaded to a normally folded condition against said frame, said leg being movable to a deployed condition away from said frame for supporting said frame on an underlying ground surface in a rearwardly tilted position of the frame.

25. The hand truck of Claim 1 further comprising a load carrier removably mounted to said frame at a location intermediate to said handle and said load plate.

26. The hand truck of Claim 25 wherein said load carrier has fasteners engageable to said vertical elements.

27. The hand truck of Claim 26 wherein said fasteners are retained to said vertical elements by spring force alone.

28. A hand truck comprising a hand truck frame comprising including parallel side members connected by one or more cross members and having lower ends fixed to a forwardly extending load plate, a pair of side wheel shafts and a pair of rearwardly extending rear wheel shafts on said frame, and wheels engageable for rotation interchangeably between said side wheel shafts in a mutually parallel wheel position and said rear wheel shafts in a mutually in-line wheel position transverse to said parallel wheel position, such that the hand truck is convertible between forward and sideways displacement.

29. The hand truck of Claim 28 wherein said frame defines a vertical frame plane and said rear wheel shafts are angled on said frame relative to a plane of said load plate such that said wheels turn in a plane inclined to said vertical when the wheels are mounted on said rear wheel shafts in said in-line wheel position such that said wheels are at least partly lifted away from contact with a ground surface in an upright standing position of said frame with said load plate resting on the ground surface, and said wheels are brought into generally vertical ground contact in a reclined load carrying condition of said frame with said load plate lifted away from the ground surface for carrying the weight of said truck frame and a load on said frame.

30. The hand truck of Claim 28 further comprising a wheelbase extension substantially longer than a spacing between said side members and having additional rear wheel shafts thereon more widely spaced apart than said rear wheel shafts on said frame thereby to provide an extended wheelbase of the hand truck in said in-line wheel position.

31. The hand truck of Claim 28 further comprising a leg spring loaded to a normally folded condition against said frame, said leg being movable to a deployed condition away from said frame for supporting said frame on an underlying ground surface in a rearwardly tilted position of the frame.
32. The hand truck of Claim 28 further comprising a load carrier removably mounted to said frame at a location intermediate to said handle and said load plate.
33. A hand truck comprising a hand truck frame including a pair of vertical members interconnected by cross members, said frame having an upper end and a lower end, a forwardly extending horizontal load plate at said lower end, a pair of shaft support brackets affixed to said vertical members, an axle supported on said brackets and terminating in opposite end shafts, a rear shaft on each of said brackets, said shaft extending away from said frame and transversely to said axle, and truck wheels interchangeably mounted for rotation on said opposite end shafts or said rear shafts, such that the hand truck is convertible between forward and sideways displacement on said wheels.
34. The hand truck of Claim 33 wherein each of said wheels is retained to a corresponding one of said shafts by a manually disengageable fastener such that the hand truck is so convertible without use of tools.
35. The hand truck of Claim 33 further comprising a Cotter pin inserted diametrically through a pin hole in any of said shafts for retaining thereon one of said wheels between said Cotter pin and one of said brackets.
36. The hand truck of Claim 33 further comprising a spacer on any of said shafts between one of said wheels and one of said brackets.
37. The hand truck of Claim 33 wherein said rear shafts are angled on said frame such that said wheels mounted on said rear shafts are lifted away from contact with a ground surface in a self-supporting standing position of said frame with said load plate resting on the ground surface and such that said wheels are brought into approximately vertical ground contacting relationship in a reclined load carrying condition of said frame with said load plate lifted from the ground surface.

37. The hand truck of Claim 33 further comprising a wheel base extension having at least two wheel mounting shafts affixed thereon and fasteners for securing said extension to said brackets, said least two wheel mounting shafts being more widely spaced apart from each other than a mutual spacing between said rear shafts.

38. The hand truck of Claim 37 wherein said wheel base extension is a plate and said least two wheel mounting shafts are perpendicular to said plate, and said plate is fastened to said brackets such that said least two wheel mounting shafts are parallel to said rear shafts

39. The hand truck of Claim 33 wherein said brackets are mutually parallel plates, each of said brackets is affixed to one of said vertical members and each of said rear shafts is affixed to an inside surface of a corresponding one of said brackets

40. The hand truck of Claim 39 wherein each of said brackets has a rear edge perpendicular to a said rear shaft affixed to said bracket.